What is claimed is:

1. A method for driving a liquid-jet head comprising a passage-forming substrate in which pressure generating chambers communicating with nozzle orifices are formed; and a piezoelectric element provided on one surface of said passage-forming substrate via a vibration plate, said piezoelectric element consisting of a lower electrode, a piezoelectric layer, and an upper electrode, wherein

said piezoelectric layer consists of a relaxor ferroelectric,

a voltage between a potential V_1, at which a capacitance of said piezoelectric element is maximal in a capacitance-potential curve of said piezoelectric element, and a potential V_2, which has a larger absolute value than an absolute value of said potential V_1 and at which an inflection point in said capacitance-potential curve is reached, is set as a drive start potential V_0, and

said piezoelectric element is driven using a drive waveform having an ejection step for changing a potential from said drive start potential V_0 to a potential V_3, at which a driving electric field having an electric field strength of 100 to 500 kV/cm is generated in said piezoelectric layer, to contract said pressure generating chamber, thereby ejecting liquid droplets through said nozzle orifice.

2. The method for driving the liquid-jet head according to claim 1, wherein said drive waveform has, before said ejection step, a first expansion step for changing the potential from an intermediate potential, which has polarity identical with polarity

of said drive start potential V_0 and has a larger absolute value than an absolute value of said drive start potential V_0, to said drive start potential V_0 to expand said pressure generating chamber.

3. The method for driving the liquid-jet head according to claim 1, wherein said drive waveform has, after said ejection step, a second expansion step for changing the potential from said potential V_3 to an intermediate potential, which has polarity identical with polarity of said potential V_3 and has a smaller absolute value than an absolute value of said potential V_3, to expand said pressure generating chamber.

4. The method for driving the liquid-jet head according to claim 1, wherein said drive waveform further has, after said ejection step, a relaxation step for changing the potential from a predetermined intermediate potential to a potential V_4, which has polarity identical with polarity of said drive start potential V_0 and has a smaller absolute value than an absolute value of said drive start potential V_0, and then returning the potential from said potential V_4 to said intermediate potential.

5. The method for driving the liquid-jet head according to claim 1, wherein said drive waveform further has, after said ejection step, an initialization step for changing the potential from a predetermined intermediate potential to a potential V_5, which is $-V_3$, and then returning the potential from said potential V_5 to said intermediate potential.

6. The method for driving the liquid-jet head according to claim 1, wherein a film thickness of said piezoelectric layer is 0.5 to 1.0 μm.

7. The method for driving the liquid-jet head according to

any one of claims 1 to 6, wherein said passage-forming substrate consists of a single crystal silicon substrate, and each layer of said piezoelectric element is formed by film deposition and lithography.

8. A liquid-jet apparatus mounted with a liquid-jet head comprising a passage-forming substrate in which pressure generating chambers communicating with nozzle orifices are formed; and a piezoelectric element provided on one surface of said passage-forming substrate via a vibration plate, said piezoelectric element consisting of a lower electrode, a piezoelectric layer, and an upper electrode, wherein

said piezoelectric layer consists of a relaxor ferroelectric,

a voltage between a potential V_1, at which a capacitance of said piezoelectric element is maximal in a capacitance-potential curve of said piezoelectric element, and a potential V_2, which has a larger absolute value than an absolute value of said potential V_1 and at which an inflection point in said capacitance-potential curve is reached, is set as a drive start potential V_0, and

said liquid-jet apparatus further comprises drive means for outputting a drive waveform to said piezoelectric element, said drive waveform having an ejection step for changing a potential from said drive start potential V_0 to a potential V_3, at which a driving electric field having an electric field strength of 100 to 500 kV/cm is generated in said piezoelectric layer, to contract said pressure generating chamber, thereby ejecting liquid droplets through said nozzle orifice.